A PORTABLE POWER GENERATOR CART¹

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INTRODUCTION.—Frequently, in entomological field research a portable electrical power supply is needed in remote areas. Several types of electrical generators are manufactured and are adequate as power sources for most electrical instruments. One of the main limitations to the use of power generators is the inconvenience associated with transporting the unit to and from areas which are inaccessible by automobile.

In the pursuit of our research on southern pine beetle in southeastern Texas, an area characterized by dense underbrush and swampy terrain, a portable power generator was needed to operate electrical hand drills, which were used in conjunction with hole cutting saws, to sample bark containing the insect. In order to transport the generator through the forest, a two-wheel cart was constructed, the specifications of which are reported herein (Fig.'s 1 & 2).

MATERIALS.—The list of materials needed to build a portable power generator and equipment cart are as follows:

For Base: 69" of 1" angle iron; $11^{"} \times 23^{"}$ 1" plywood; $2^{"} \times 18^{"}$ -1/8" flat iron; $3/8^{"} \times 3^{"}$ bolts (4 each); $3/8^{"} \times 3^{"}$ bolts (8 each); $1/2^{"} \times 4^{"}$ bolts (4 each).

For Wheel Assembly: Pillow block bearings (4 each); 36" of 1" steel shaft; 3" flat washers (2 each); Balloon type tires 19.625×11.25 (2 each); $1/4" \times 3"$ bolts (6 each).

For Handle: 90" of 3/4" pipe; 26" of 1/2" steel rod; 12 3/4" of 3/4" angle iron for 9mm ammo-tool box; 4" of 1/2" pipe for ground rod 28" of 1/2" steel rod); 60" ground wire; 100' of 3 wire electric cord (2 each).

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FIG. 1. Bottom view of portable power generator cart showing wheel and axle assembly.

For Stand Pipe: 24" of 1" pipe; $3\frac{1}{2} \times 6\frac{1}{2} - 1/16$ " flat iron; 3" of 1¼" pipe; $1\frac{1}{4} \times 3$ " cotter key attached to 5" of small chain.

The rectangular frame was constructed from the 69" of 1" angle iron, two 9" pieces of flat iron and the 3/4" plywood. The independent wheel and axle assembly was made using four 1" pillow block bearings, two 3" washers, 36" of 1" metal shaft and the two balloon-type tires. (Fig. 1). Assembly of the handle was accomplished by cutting and welding the 3/4" pipe to fit needed specifications. The stand pipe was made of 1" pipe fitted inside the 4" piece of 1¼" pipe and was welded to the junction of the handle (Fig. 2). A small tool box was welded to the 3/4" angle iron behind the stand pipe.

Discussion.—The cart enabled the field team to transport the generator and all tree climbing gear into the research sites. The independent wheels and axles increased the maneuverability considerably. With the low pressure balloon-type tires the cart could be pulled by one man with ease over logs and other debri which were encountered. The overall size and weight (75 lbs.) of the cart en-



FIG. 2. Perspective view of portable power generator cart.

abled its transportation in the back of a pickup truck. During the summer of 1971, the cart permitted the transporting of an electrical power generator into the remote rough areas of southeast Texas.

Descriptors: technique; power generator cart.